CLAIMS:

1. A method for controlling the transient response of a power converter powering a load (10), said power converter comprising a power switch (T1), a synchronous rectifier (T2) and a capacitor (30; C_1, C_2, ... C_N) coupled between an input and an output of the power converter, said method comprising the step of

- disabling said synchronous rectifier (T2) in response to a signal indicative of a change of said load (10),

characterized by

- providing said signal based on a current representing said change of load.

2. The method as claimed in claim 1,

characterized in that said load (10) communicates information about its needed current to provide said signal.

3. The method as claimed in claim 1,

characterized in that said signal is provided by detecting a current (I_o) through said load (10).

4. The method as claimed in claim 1,

characterized in that said signal is provided by detecting a current (I_C).

5. A method for detecting the transient response of a power converter powering a load (10), characterized by

- filtering a voltage across said capacitor (30) by a first RC element, said first RC element satisfying

$$C_1 R_1 \leq \frac{L_C}{R_C}$$

wherein

R_C = parasitic serial resistance of capacitor

L_C = parasitic serial inductance of capacitor

R_1 = resistance of first RC element

C_1 = capacitance of first RC element

6. The method as claimed in any of claims 1 to 5,

characterized that said signal based on a current is compared to at least one threshold value.

7. Transient response controller to be used in a power converter powering a load (10), said power converter comprising a power switch (T1), a synchronous rectifier (T2) and a capacitor (30; C_1, C_2 ... C_N) coupled between an input and an output thereof, said transient response controller being coupled at least to said synchronous rectifier (T2) to disable said synchronous rectifier in response to a signal indicative of a change of said load (10),

characterized in that said transient response controller (40) is coupled to means for providing said signal based on a current representing the change of load.

8. A power converter powering a load, comprising a power switch (T1), a synchronous rectifier (T2) and a capacitor (30; C_1, C_2 ... C_N) coupled between an input and an output of the power converter, and a transient response controller (40) coupled to at least said synchronous rectifier T2, said transient response controller (40) disabling said synchronous rectifier in response to a signal indicative of a change of said load (10), by means for providing said signal based on a current representing said change of load, said means for providing said signal being coupled to said transient response controller (40).

9. The power converter as claimed in claim 8,

characterized in that said means for providing said signal is a controller of said load (10) communicating the power consumption of said load (10) to said

transient response controller (40).

10. The power converter as claimed in claim 8, characterized in that said means for providing said signal comprises means for detecting the current through said load (10) and means for comparing said current (I_o) with at least one threshold value.

11. The power converter as claimed in claim 8, characterized in that said means for providing said signal comprises means for detecting the current (I_C) through said capacitor (30) by a voltage drop across said capacitor (30) and means for comparing said voltage drop with at least one threshold value.

12. The power converter as claimed in any of claims 8 to 11, characterized in that said transient response controller (40) is connected to said power switch (T1) to switch off said power switch in response to said signal.

13. Use of power converter as claimed in any of claims 8 to 12 for powering high speed integrated circuits.